ALTS - May 16, 1996 - ¶¶ 94-97

as for the ILEC itself. Penalties for failing to implement these intervals and quality standards of service should be imposed, including forfeiture of non-recurring charges, monetary damages, and discounts on loop rates.

ALTS believes that the unbundling of network elements below the first serving wire center, most notably the loop and the ports, should proceed immediately. Subloop unbundling should be available upon bona fide request, and as part of negotiations, and thus ALTS agrees with the Interconnection NPRM's tentative conclusion that "we should require further unbundling of the local loop" (¶ 97). Because the burden should rest on the ILEC to prove why it cannot unbundle subloop elements if requested, ALTS also agrees with Interconnection NPRM's tentative conclusion that "LECs have the burden of proving that it is technically infeasible to provide access to a particular network element" (¶ 87). Proposed Fule 403(d) in Attachment A requires that documented justification for a refusal to provide subloop elements must be supplied within 15 days of receipt of the request.

Basic subloop components include: a) the network interface device: i.e., the demarcation point between the end user and the unbundled loop; b) loop distribution, i.e., the portion of telephone cable from the network interface to the terminal block or concentrator; c) loop feeder: the telephone cable facility between the terminal block and the main distribution frame; and, d) concentration points where electronics in the network are deployed to improve quality or aggregate quantities of loops.

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CITIZENS UTILITIES COMPANY INITIAL COMMENTS, MAY 16, 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY
Before the

FEDERAL COMMUNICATIONS COMMISSION Washington, D.C. 20554

In the Matter of)	
)	
Implementation of the Local Competition)	
Provisions in the Telecommunications)	CC Docket No. 96-98
Act of 1996)	
)	

COMMENTS OF CITIZENS UTILITIES COMPANY ON THE INTERCONNECTION NOTICE OF PROPOSED RULEMAKING

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threatening network reliability; and (ii) the availability of necessary systems support, billing and other services necessary to the provision of access to network elements. Each issue requires case-by-case analysis that should be governed by the same technical feasibility standards discussed in Section II. B.2.a.1. of these comments, *supra*.

Based upon its experience in both local exchange and competitive local exchange operations, the Citizens Companies believe the following list should, subject to the technical feasibility standards discussed in Section II. B.2.a.1. of these comments, *supra*, constitute the minimum level of required network unbundling:

- 2 and 4 wire local loops, as a whole, and 2 and 4 wire loop distribution facilities, loop concentration plant, and loop feeder plant;
 - building riser cable owned or controlled by the incumbent LEC;
 - tandem and end office switching;
 - dedicated and common transport links;
 - operator services, including busy line verification and interrupt;
 - 911/E-911 facilities and services, including selective call routing;
 - access to databases, including directory assistance, 911/E-911, LIDB and CMDS;
 - directory listings in incumbent LEC-affiliate directories; and
 - signaling links, signal transfer points and service control points
 - II.B.2.d. Pricing of Interconnection, Collocation, and Unbundled Network Elements

II.B.2.d.1. Commission Authority to Set Pricing Principles

The Citizens Companies support as correct the conclusion that the Commission rules required

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In the Matter of)	٠.
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Competition Provisions in the)	
Telecommunications Act of 1996)	

LCI INTERNATIONAL TELECOM CORP. COMMENTS ON IMPLEMENTATION OF THE INTERCONNECTION AND LOCAL COMPETITION PROVISIONS OF THE TELECOMMUNICATIONS ACT OF 1996

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ILECs, and will reduce the cost and facilitate the implementation of competitive entry. Below LCI discusses the rules and standards that the Commission should adopt.

2. The Commission must define minimum standards for ILEC interconnection and network unbundling.25

The Commission should require that ILECs unbundle their networks into a minimum of five basic elements local loop, local switching, transport, signaling, and operational systems, and necessary subelements, as described herein. The local loop should be further unbundled into separate distribution and feeder elements, and interconnection should be required at any point of aggregation along the loop.26 Multiplexing in the local loop, whether performed by digital loop carrier, digital cross-connect systems, or other equipment, should be offered as a separately rated element, as it currently is for central office multiplexing. Moreover, ILECs should be required to negotiate the establishment of meet-point interconnection at other points along the loop, in response to requests from competitive carriers. Finally, interconnection should be provided at the network interface (the device that forms the demarcation point between an ILEC's loop and a customers inside wire). This level of unbundling will promote the deployment of loop facilities by facilities-based carriers, and will ensure that resale carriers will have a choice of providers of terminating transport.

²⁵ Responds to NPRM ¶ 77, et seq.

²⁶ Responds to NPRM ¶ 77, 95, 97.

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Implementation of the Local Competition Provisions in the Telecommunications Act of 1996)))	CC Docket No. 96-98
		Programming .
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COMMENTS OF LDDS WORLDCOM

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directly "impairing" the ability of the requesting carrier to provide a desired service.

[¶ 90] 35/

C. SPECIFIC UNBUNDLING PROPOSALS

As discussed above, LDDS WorldCom agrees that the Commission should adopt a baseline set of unbundled network elements for purposes of this initial order. But that baseline is only a starting point for future unbundling requests that may be made of ILECs by other carriers. The Commission should make clear that its baseline regulations are not preclusive of additional disaggregation of the local network.

For purposes of the initial baseline elements, LDDS WorldCom endorses the list filed today by the TCC, including the definitions of the elements included in that filing. Specifically, we agree that the Commission should require, at a minimum, that ILECs immediately make available: the Network Interface

^{35/} Some parties nevertheless have maintained that the plain language of Section 251(c)(3) can be read to deny the ability to purchase all network elements in combination. They suggest that the existence of the Section 251(c)(4) resale option in the Act somehow means that a telecommunications carrier must own at least one network element itself in order to qualify to purchase unbundled elements. This argument does nothing to address the plain language of Section 251(c)(3), which contains no such restriction, nor the legislative history behind it. It disregards the fact that most requesting carriers will interconnect with facilities they use for toll services. More fundamentally, however, this argument ignores the major differences between resale of retail services under Section 251(c)(4) and the purchasing of network elements under Section 251(c)(3). When those differences are examined, it is even more clear that Congress intended for telecommunications carriers to have both options. See Section IV. A.4., supra.

Device; Loop Distribution; Loop Concentrator/Multiplexer; Loop Feeder; Local Switching; Local Operator Services; Local Directory Assistance; Common Transport; Dedicated Transport; Digital Cross-Connect System; Data Switching Element; SS7 Message Transfer and Connection Control; Signaling Link Transport; SCPs/Databases; Tandem Switching; and Advanced Intelligent Network features.

We focus our specific comments here on the unbundled local switching element. This element has been the main issue that LDDS WorldCom has raised in state local competition proceedings over the past year. As discussed below, our particular concern is that local switching be provided in a manner that permits requesting carriers to combine it with loops and call termination to create a network facilities platform over which they can provision the local services they design and market. 36/

Such a combination of elements is crucial to LDDS WorldCom's ability to expand services to our nationwide customer base. We intend to combine the unbundled local switching element with other unbundled network elements to create a platform over which we can provide the full range of services that could be provided by the ILEC -- basic local exchange service, vertical services, interexchange services and exchange access. The principal elements of the network platform include the loop switch capacity (including the ability to activate

<u>36</u>/ <u>See LDDS WorldCom Petition for a Total Wholesale Network Service Tariff, Illinois Commerce Commission Docket No. 95-0458.</u>

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of 1996)	

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May 16, 1996

TABLE 1 UNBUNDLED NETWORK ELEMENTS TECHNICALLY FEASIBLE TODAY

Network Element and Description

The Local Loop element consists of four subelements that must be unbundled:

Network Interface Device/Unit: the point of demarcation between the end user's inside wiring and the unbundled loop.

Loop Distribution: the portion of the outside plant cable from the Network Interface or building entrance terminal at the customer's premise to the terminal block appearance on the distribution side of a Feeder Distribution interface

Digital Loop Carrier/Analog Cross Connect: the equipment used to assign and connect multiple incoming Loop Distribution elements to an equal or smaller number of Loop Feeder Channels.

Loop Feeder: the physical facility between the Digital Loop Carrier or Feeder Distribution interface and the main distribution or other designated frame within the central office or similar environment.

The Unbundled Local Switching element consists of three subelements for which there should be separate charges plus the signaling/databases needed to create and bill a call path. The three subelements are:

Line Port: the physical connection between the customer's local loop and the end office Technical Feasibility

Technically, it is not a problem to unbundle each of these subelements of the Local Loop. In fact, ILECs construct their networks by connecting these subelements. Where there is Loop Feeder, it connects to the Digital Loop Carrier, which connects to the Loop Distribution. All of these connections are made via some sort of patch panel (MDF or DS1 frame, for instance); a purchasing carrier's subelements can easily meet the ILEC's subelements at the patch point. Where there is no Loop Feeder, the Loop Distribution is patched to the ILEC's class 5 switch via the MDF. Again, the purchasing carrier's subelements meet the ILEC's subelements at the patch point, in this case the MDF. Further development is needed of recording capability at the Digital Loop Carrier. The Network Interface Device/Unit is a passive or active unit that patches customer-supplied inside wire to the ILEC's Loop Distribution (or conceivably directly to the Loop Feeder). Again, as this is a patch point, the purchasing carrier can very easily utilize this subelement to connect its distribution network to the customer's inside wire.

The Unbundled Local Switching element is purchased as a minimum block of line ports, a minimum level of trunk port capacity, and a minimum level of busy hour switch capacity; the purchasing carrier will connect at line ports and trunk ports but allow the ILEC to determine how call paths will be set up. Line and trunk ports are very discrete

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occassionally subsidies as well -- and these distortions will be built into rates for the wholesale service, which will be priced on a "top down" basis. The price of an unbundled network element, on the other hand, must be set at economic cost both to allow other carriers to make efficient buy/build decisions and to reduce the ILEC's ability to engage in anticompetitive strategic pricing. Some elements can be discretely identified, costed, and priced, for example, an individual loop or transport trunk. Other elements have large units of capacity, such as switches, and the prices should be set at the underlying costs of providing that capacity. (See the discussion of paragraphs 98-100 on the unbundled local switching element below.)

3. Unbundled Network Elements Must Be Made Available

[93] The unbundling of all four categories of elements identified in the Notice -- loops, switches, transport facilities, and signaling and databases -- is technically feasible, and necessary for MCI's ability to provide services it seeks to offer, and would not involve proprietary interfaces or technology. Unbundled loops already are tariffed in Michigan, Illinois, New York, Connecticut, and Maryland. As explained in Table 1, it also is technically feasible to unbundle the subelements of these four categories. The ILECs already possess the technical standards necessary for each of these elements and need only make them public so carriers may incorporate them into their network designs.

a. Loop Plant Must Be Unbundled into Subelements

[97] MCI agrees with the Commission that the local loop should be further unbundled into network interface device, loop distribution, digital loop carrier/analog cross connect, and loop feeder. None of these involve proprietary equipment. MCI cautions that any ILEC claims of

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technical infeasibility to unbundle loop subelements, although false, must not be used to delay the availability of the unbundled local loop.

b. An Unbundled Local Switching Element Must Be Made Available

[99-101] The ULS element, equivalent to the virtual lease of switch capacity, consists of all the functionalities residing in a central office switch and/or remote switching systems needed to provide the fully array of local exchange services, including switched access service -- dialtone, screening, recognition of service request, recognition of call-specific information, digit analysis, routing, testing, recordings, signal generation, call completion or handoff, SSP functionality and tables, PIC tables, trunk tables class of service tables, data ports for remote access to switching functions, CLASS tables, and AIN tables. In purchasing the ULS element at an end office, a carrier commits to the purchase of a minimum block of line ports, a minimum level of trunk port capacity, and a minimum level of busy hour switch capacity for a minimum period of one year, thus sharing the investment risk with the ILEC.

[99-102] Switching costs are a function of line connections, trunk connections, and busy hour demand on the switch matrix and processor, and therefore the rate for the ULS element should have an element relating to each, set to recover the associated TSLRIC costs. Line-connections should be recovered through a per-line charge on the contracted capacity, with an additional per-line charge assessed if the purchaser exceeds its contracted level. Trunk-connection costs should be recovered through a minute-of-use charge since in a ULS environment each trunk port is effectively a common resource originating/terminating traffic from/to each ULS-based provider (including the ILEC, itself). Busy hour costs, caused by demands on the

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EXECUTIVE SUMMARY OF INITIAL COMMENTS OF THE PUBLIC UTILITIES COMMISSION OF OHIO (PHASE I)

The Public Utilities Commission of Ohio (PUCO) respectfully submits that the Federal Communications Commission (FCC) should substantially reconsider the tentative approach outlined in this Notice of Proposed Rulemaking (NPRM). Instead of adopting the one-size-fits-all approach embraced in the NPRM, the FCC should pursue a more cooperative joint regulatory approach to effectively and efficiently promote local competition with the help of the states. An approach allowing for flexibility and discretion would better conform to the substantial role for states envisioned by Congress. In enacting the 1996 Telecommunications Act, (1996 Act) Congress affirmatively chose not to amend 47 U.S.C. § 152(b), which expressly limits the FCC's jurisdiction to interstate telecommunication issues and expressly reserves intrastate jurisdiction to the states. In contrast to the NPRM, the 1996 Act provides a specific and limited standard for the preemption of state interconnection regulations that are inconsistent with the Act. Section 251(d)(3). The regulatory model advocated by Ohio would diffuse the preemption conflict set up by the NPRM.

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offered on an unbundled basis, that component should be examined for technically feasibility. The state commission's duty under Section 252 to review all interconnection agreements adopted by arbitration, includes a review of the terms regarding access to network elements. In Ohio's view, a dynamic definition of "echnically feasible" unbundling can be best applied during the state arbitration process, if warranted, and nothing in the 1996 Act precludes such an application. The PUCO Staff also believes that a given determination of the definition of "technically feasible" unbundling is a factintensive inquiry and should be by the state arbitrators, not the FCC. We agree with the FCC's tentative conclusion that the LECs have the burden of proving the technical infeasibility of providing access to a particular network element. NPRM at ¶ 87. The LEC's ownership and control of the pertinent network element puts them in the best position to demonstrate why they cannot provide access to that element. If two networks are truly similarly structured, it stands to reason that it is technically feasible to unbundle both in a similar manner.

(3) Specific Unbundling Proposals

(a) Local Loops (¶¶ 94 - 97)

The FCC focuses on the definition and delineation of the local loop. The FCC tentatively concludes that it "should require further unbundling of the local loop." NPRM at ¶ 97. The FCC seeks comment on the propriety of requiring unbundled access to loops prior to their concentration or multiplexing. NPRM at ¶ 97.

The PUCO Staff agrees that requiring unbundling only to the level of the entire local loop is probably not sufficient to promote efficient competition. The PUCO Staff would not object to the FCC's establishment of minimum unbundling levels which divided the loop into its feeder and distribution portions. Again, we reiterate that the ultimate level of unbundling should be determined by the market. For example, if a new entrant has major distribution facilities deployed in a community (e.g. two-way coaxial cable), it may not need access to the ILEC distribution facilities at the lowest level. Instead, it may be more efficient for the new entrant to gain access at the local pedestal locations.

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(b) Local Switching Capability (¶¶ 98-103)

The FCC discusses the Illinois Commerce Commission's "local switching platform" approach to switch unbundling. The FCC seeks comment on this and alternative approaches. NPRM at ¶ 100. The PUCO Staff would not be opposed to a local switching platform unbundling requirement such as that adopted in Illinois. However, because other states have defined switch unbundling in differing ways, the PUCO Staff believes the best solution would be for the FCC to recognize the several major approaches to switch unbundling and identify the minimum requirements that would apply to each approach. This would enable states that have proceeded with unbundling to continue without backtracking and potentially creating significant delays in the introduction of viable local competition in those states.

d. Pricing of Interconnection, Collocation, and Unbundled Network Elements

(1) Commission's Authority to Set Pricing Principles (¶¶ 117 - 120)

The FCC tentatively concludes that it has authority under Section 251(d) to adopt pricing rules to ensure that rates for interconnection, unbundled network elements, and collocation are just, reasonable, and

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COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION IN RESPONSE TO **NOTICE OF PROPOSED RULEMAKING**

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service provider deployment of alternative facilities on a piece-by-piece, or element-by-element, basis.²⁴ In addition, unbundling network functions into their respective component elements will serve to enhance competition in the provision of such elements by alternative manufacturers and suppliers.

As discussed above, incumbent LEC service can be broken down by function into four general categories of elements -- loop, switch, transport, and signaling and databases. Unbundling and making the respective component elements of these functions accessible separately²⁵ can be achieved as described below.

A. Loop

- Loop Distribution, which is the drop to the customer's premises originating from the subscriber loop carrier ("SLC") pedestal or similar architecture, and terminating at the first point of termination on the customer's premises. In many multiple-dwelling units ("MDUs"), the loop distribution plant is located within the MDU; accordingly, unbundling the loop distribution plant may be the most practical way for alternative providers to reach individual units within an MDU.
- Loop Concentration, which is the SLC or similar equipment configuration at which individual subscriber traffic is multiplexed/de-multiplexed and connected

²⁴The legislative history of the 1996 Act reflects congressional recognition for the need for unbundling network elements into element-specific categories. Senate Commerce Committee Chairman Pressler acknowledged that "access to signaling and databases [is] important if you are going to compete and get into the market." See 141 Congressional Record S8163. Representative J.C. Watts said "As the rules that define facilities-based competition are developed and implemented, I expect those charged with that responsibility to make certain ... [that] all local exchange service providers ... provide line-side interconnection and unbundling of the local loop into its functional sub-elements [emphasis added]." See 142 Congressional Record H1174.

²⁵All basic network elements and sub-elements require a standard interface for access. Use of the term "standard" is meant to imply recognized or accepted by the industry.

- to loop distribution for termination at the customer's premises. The justification for unbundling loop distribution plant also applies to loop concentration plant.
- Loop Feeder, which is the medium on which multiplexed subscriber traffic is carried from the line side of the central office switch to the Loop Concentration facility. Unbundled access to the loop feeder plant may be attractive to cable providers or alternative providers which have their own distribution plant but wish to use the incumbent LEC's concentration and feeder plant to transport traffic to and from the incumbent LEC's switch.

The Commission has proposed to require incumbent LECs to provide local loops as unbundled network elements, and tentatively concluded that it should require further unbundling of the local loop. ²⁶ The TIA endorses the Commission's tentative conclusion and urges that where such unbundling is technically feasible, the local loop be further unbundled into its component elements. ²⁷

B. Switch

Switching, which provides the functionalities necessary to connect appropriate lines or trunks to or from a desired communications path. Switching is an essential element in the provision of local exchange service. Some alternative service providers, i.e., Teleport, MFS, already own switches, and some interexchange carrier ("IXC") switches could be modified for use in the provision of local exchange service. Unbundling the switch will permit those who own switches to make use of their existing plant, and allow those who do not own switches to purchase access to incumbent LEC switches. Unbundling will provide a degree of flexibility that will encourage the development of facilities-based local exchange competition and enhance competition in the manufacture and sale of switches.

²⁶NPRM, ¶ 94 and ¶ 97.

²⁷However, the TIA urges the Commission to recognize that there may be material differences between technologies and implementations of technologies used to provide the same functionality. Accordingly, interconnection which is technically feasible for one incumbent LEC may not be technically feasible for another which is using a different technology to provide the same functionality.

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INITIAL COMMENTS OF THE WYOMING PUBLIC SERVICE COMMISSION

The Wyoming Public Service Commission (WPSC) hereby submits its initial comments pursuant to the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking issued in the above-captioned matter on April 19, 1996 (NPRM).

1. An introductory observation about the pragmatic policy of the federal Telecommunications Act of 1996. The federal Telecommunications Act of 1996 (Act) establishes a procompetitive, technologically progressive and relatively comprehensive framework for the future development of the telecommunications industry in the United States. The Act recognizes that the task of bringing about the improved telecommunications system that it envisions is extremely complex; and it recognizes that the task must be accomplished through the cooperative efforts of the federal government and the states. It consequently allots specific tasks to the states and to the federal government.

The Act wisely makes the judgment that the system must have some national uniformity for it to fit together and function properly in a more

8b. How should the states deal with collocation issues? At Section 549a, the WPSC's draft rules on Network Interconnection and Unbundled Access contain the following requirements on collocation:

"Physical collocation of equipment necessary for interconnection or access to unbundled network elements shall be provided at the premises of the incumbent local exchange carrier, except that the carrier may provide for virtual collocation if it is demonstrated to the Commission that physical collocation is not practical for technical reasons or because of space limitations. The functionality of equipment to be collocated, along with the vendor decision for any required equipment purchases, should be negotiable among the parties. Virtual and physical collocation have the meanings ascribed to those terms in the Federal Communications Commission CC Docket 91-141, Expanded Interconnection with Local Telephone Company Facilities."

Again, the WPSC has articulated a workable and thorough rule squarely within the letter and spirit of the Act. It utilizes the FCC's definitions of the terms "virtual collocation" and "physical collocation" and uses them to help in building the details of locally relevant rules — another example of how general (national) and particular (local) concepts can and should work in harmony.

We suggest that the FCC should not act to preclude properly adopted Wyoming rules as described above. The Act states that, except for certain defined exceptions, physical collocation is required. It appears that the "national standard" - physical collocation - is set by the Act. That standard should be placed in the FCC's